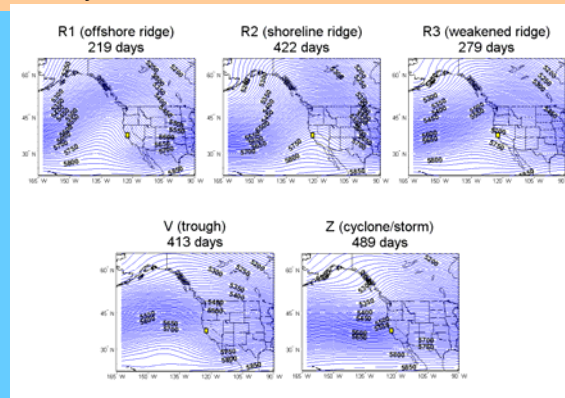


Data-driven Modeling of Influence of Meteorology on Ozone and PM

Ahmet Palazoglu, UC Davis, anpalazoglu@ucdavis.edu

Previous studies for CCOS Domain and Bay Area:

- Quality assurance for surface meteorological data
- Intra-basin cluster analysis of surface wind fields
 - Synoptic climatology and atmospheric transitions triggering episodes
 - Identify and characterize key mesoscale flows affecting source-receptor relationships
 - Assess relative air pollution potential for various meteorological scenarios
- Inter-basin meteorological analysis
 - Coherence of meteorology and air quality throughout Central Valley



Possible collaborations and projects can include:

- Surface meteorology data quality assurance
 - Monitoring network design
 - Validate 2010 measurements against previous databases
 - Online quality assurance (early failure detection)
- Intra- and Inter- basin meteorological analyses
 - Selection of IOPs during field study
 - Representativeness of meteorology for simulation studies
- Exploratory data analysis after field study
 - Advance conceptual model for CA-wide air quality
 - Model performance evaluation
 - Source apportionment by receptor modeling

- Beaver, S., and A. Palazoglu, "Influence of Synoptic and Mesoscale Meteorology on Ozone Pollution Potential for San Joaquin Valley of California," *Atmospheric Environment*, in press (2009).
- Beaver, S., and A. Palazoglu, "Hourly Surface Wind Monitor Consistency Checking over an Extended Observation Period," *Environmetrics*, in press (2009).
- Beaver, S., S. Tanrikulu, and A. Palazoglu, "Cluster Sequencing to Analyze Synoptic Transitions Affecting Regional Ozone," *J. Applied Meteorology and Climatology*, 47(3), 901-916 (2008).
- Beaver, S. and A. Palazoglu, "A Cluster Aggregation Scheme for Ozone Episode Selection in the San Francisco, CA Bay Area," *Atmospheric Environment*, 40, 713-725 (2006).
- Beaver, S. and A. Palazoglu, "Cluster Analysis of Hourly Wind Measurements to Reveal Synoptic Regimes Affecting Air Quality," *J. Applied Meteorology and Climatology*, 45(12), 1710-1726 (2006).